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Governance model for integrating organizational project management (OPM) with corporate practices

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Abstract Governance is becoming more important for sustaining success and ensuring continuous delivery of business value to organizations. Most organizations are competing to deliver the highest level of service and attaining stakeholders' satisfaction.

Implementing sound organizational project management governance framework can enable the kind of visibility and control that are essential to successfully deliver the expected benefits from projects and portfolios.

The market survey conducted by the authors revealed that the current level of integration between organizational project management (OPM) and other relevant practices is not enough and there is a need to have a unified integrated model that links OPM with other governance components (practices/systems) such as strategy management, enterprise risk management, internal audit, Quality management, performance management, business excellence and lessons learned. The survey also concluded that there is a good opportunity for automating the model to achieve better visibility and effective resource usage.

Having proposed the model, it needed validation, which was done through implementing the model in organizations through automation projects. The implementation resulted in some changes in the model to achieve the required levels of accountability, responsibility, and transparency. These changes were incorporated into the model and were reflected in its modified version. Finally, the paper highlighted the recommended improvements that would enhance the future implementation of the model.

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Introduction and literature review

The lack of full integration of many practices and systems into one integrated model that enables successful delivery of the organization's benefits is noticeable. This is reported although

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Nomenclature

EPMO	enterprise project management office	PMO	project management office
ERM	enterprise risk management	PMS	performance management system
IA	corporate internal audit	QMS	quality management system
OPM	organizational project management	IT	information technology
3Ps	projects, programs, and portfolios		

organizations are implementing many systems and have several standardized practices to manage their projects, programs, and portfolios with different levels of maturity, and although some of them partially succeeded in having a governance model that covers some of their practices and systems.

As a general definition, governance is an oversight function that emphasizes fairness, accountability, transparency, and responsibility. Governance's focus on stakeholders, creates connections between all organizational levels and makes organization more successful by establishing coordinated consistent mechanisms that link objectives to execution. Effective governance will add greater visibility and control into projects, programs and portfolios and enables a better decision support system.

Project management institute (PMI) various standards of project [1], program [2], portfolio [3] highlighted organizational governance model as function that project should be aligned with.

Rodenstedt [4] explained the need to have a governance system, and explained its structure and how to manage the interaction between a portfolio and its individual initiatives. He introduced the "Gate" concept when testing an initiative and taking the decision to continue with portfolio process or not. He also showed the different phases of the business case throughout the program management and the need to continuously updating the business case including the closing phase.

Hopkinson [5] developed a guide to governance of project management. His model consists of four components: portfolio direction, project sponsorship, project management, and reporting and eleven general principles to adopt.

Davis-Muffett and Kerr [6] highlighted the skills required to have a good governance structure which are putting the right process in place, getting the right people engaged, and marketing it to all stakeholders.

Crawford and Helm [7] tackled the value of project management governance in the public sector and handled the topic from the "public value management" perspective rather than traditional public management. They also set the expectations from governance which are accountability and transparency, control and compliance, managing the risks, consistency in delivery, ensuring the value for money, and stakeholder engagement.

Dinsmore [8] introduces the enterprise project governance and its relation with strategy, risk, portfolio, stakeholders and transformation. He offered three scenarios for the success of the project governance based on organizational scenarios.

Bodych [9] studied the governance of projects and portfolios with the corporate processes, competencies, culture and the role of the PMO in this system.

Many international standards have dealt with enterprise risk management "ERM" such as the 31000 standard of International organization for standardization "ISO" [10] and British Standard "BS" 31100. It elaborated the different categories of enterprise risk and showed that project/portfolio risks could be escalated to the enterprise level and introduced a framework for enterprise risk management.

Dubai government excellence program (DGEP) [11] has nine criteria for organizations to excel. Criterion no. 1 "strategy" of this program is linked with projects through project portfolios. One of many subsidiary awards of this program named "The most distinct technical project". This award is not reflected or linked to the day-to-day management activities and to submit for this award, the organization should prepare many documents to fulfill the requirements.

The IAM "Institute of asset management" in his publication (anatomy of asset management) [12] introduced a conceptual model that considers all the aspects related to an asset (asset could be a result of a project) from its inception till disposal and passing by the design, execution, operation and maintenance stages. The value of this conceptual model is that it gives the overall picture and the full lifecycle of an asset, i.e. dealing with the asset from being just an idea and how it is created, operated, maintained, and disposed. This includes a full management of the project benefits. However, this conceptual model does not give any methodology for integrating all its components.

Problem statement and research methodology

The lack of integration across various organizational management practices has resulted in some symptoms as follows:

1. Complaints of duplication and loss of efforts across various practice areas and systems.
2. Most systems are operating in silos with no real benefits of running a one comprehensive system that links projects with other management systems.
3. Lack of integrated automation across practice areas.

As a result, the methodology adopted in this paper will be as follows:

- Conducting a survey across various types of organizations to investigate:
  - The management practices and systems that are currently adopted by this sample.
  - The automation level of these practices and systems.
  - The current availability of an integrated organizational governance model that can overcome the abovementioned symptoms.
  - How the organizations define the integration of their implemented systems.

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- Proposing a governance model that combines organizational project management with other practices and systems.
- Validating the proposed model through two different automation projects.
- Acting upon the results of the validation process to modify the model.
- Capturing the implementation results.
- Recommending future improvements.

The survey

A survey was conducted [13] with the aim of gathering the data related to the implemented systems and their interrelations with a special focus on United Arab Emirates. It aimed to survey the degree of having standardized project-related processes and practice, the components of existing models, the state of automation of the surveyed practices, and other features that will be explained in the coming paragraphs.

The targeted sample focused on those organizations (public and private) that have projects to execute their strategy. Their projects types varied among design, construction, IT, railway, infrastructure, roads, bridges, parks, preparing, establishing guidelines, and restoration projects (covering a big portion of the project types' spectrum).

The sample size needed was 94 (confidence level of 95% and confidence interval of 10), (sample size = $Z^2 * p * (1-p)/C^2$, where $Z = 1.96$ for confidence level of 95%, $p = 0.5$ percentage picking a choice, and $C = 0.1$ confidence interval) [14].

The responses received were 104 out of 279 (37.2%) showed a good variety of organizations' sizes and in participants' positions as shown in Fig. 1. (This survey was conducted to serve two researches – refer to reference no. 13).

The results showed high adoption percentages of many governance systems/practices/frameworks. These percentages range between a minimum of 40% (for benefits management and enterprise risk) and a maximum of 69% (for project management) as shown in Table 1. The results indicate the relative moderate attention of the organizations to the main project-related practices of project management 69%, strategy 58%, performance and QMS 55%, program and portfolio 50%, while those with percentages less than 50% (excellence 48%, lessons learned and OPM: 42%, and ERM and benefits: 40%) are not gaining the same attention.

The survey then checked one of the main enablers that ensure effective systems' integration which is "automation". If done properly it can lead to better performance, collaboration, visibility, and better resource usage. One of the main questions of the survey was about the automation level of their practices. Table 2 shows the results of the state of practices/systems automation.

The results showed the highest level of automation in project management (73%), followed by 46% for performance management, and the lowest results were related to Benefit Management, OPM Maturity assessment, and business excellence practices with 5%, 8%, and 14% respectively.

The average degree of automation (29%) indicates that there will be notable automation efforts in the near future within the surveyed organizations.

The survey then checked the level of availability of an integrated model. The response for the question of: "Do you have a Clear Model/Framework that integrates various governance systems within your organization?" revealed an average percentage of 45%.

The previous finding was further elaborated by another question: "Please mark the systems/practices that are part from your existing Model/Framework". The results are shown in Table 3.

Table 3 shows that project management, quality management, and strategy management are the highest systems that are part of a governance model (81%, 55%, and 49% respectively) while the lowest were Benefits management practice (15%) and Project maturity model (6%).

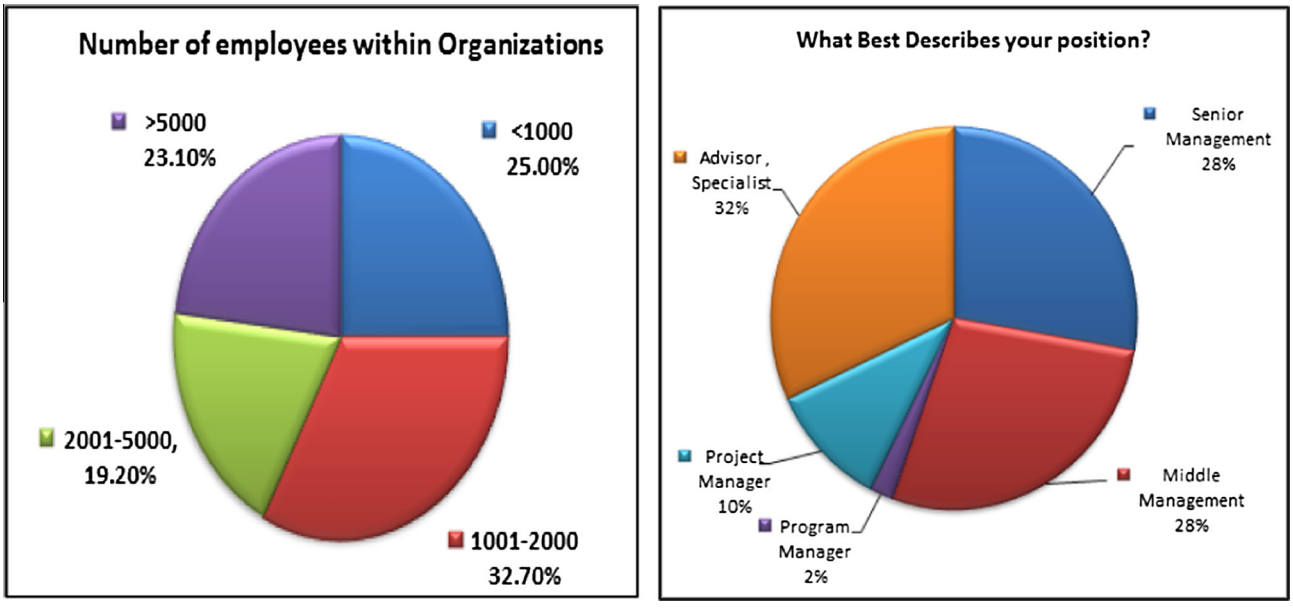

Fig. 1 Scale of organization replied to the survey and the position of the respondents.

Table 1 Answers to question: to which degree you have a standardized and stable process and practice.

Project Management	69%
Strategy Management	58%
Performance Management	55%
Quality Management System	55%
Program Management	51%
Portfolio Management	50%
Business Excellence	48%
Lessons learned	42%
OPM maturity assessment	42%
Enterprise Risk Management	40%
Benefit Management Practices	40%

Table 2 Level of automation for each of the surveyed practices.

Project Management	73%
Performance Management	46%
Quality Management System	43%
Program Management	35%
Strategy Management	27%
Enterprise Risk Management	24%
Portfolio Management	22%
Lessons learned	19%
Business Excellence	14%
OPM maturity assessment	8%
Benefit Management Practices	5%

It is worth noting that the implemented practices (as shown in Table 1) are the top 5 that contribute in an integrated model (as shown in Table 3), which indicates that highly and matured implementation practice is more likely to be a part and overall integrated model/system.

On the other hand, the results gave the indication that many important governance components that are required to complete the governance structure need to be main parts of an overall integrated model. (it can be seen from the percentage of contribution of these components: performance 45%, ERM 36%, Excellence 19%, Benefits 15%, etc.)

The following paragraphs depict the results of the survey's question that explores the existing degree of linkage between different governance systems and the organizational project management "OPM" (project, program, and portfolio) as shown in Fig. 2.

Linkage of strategy management with OPM governance components

No doubt that strategy management is the backbone of the most governance systems that aim for achieving the corporate goals.

Table 3 Contribution of the various systems/practices in the integrated models within organization.

Project Management	81%
Quality Management System	55%
Strategy Management	49%
Program Management	47%
Performance Management	45%
Enterprise Risk Management	36%
Lessons learned	32%
Portfolio Management	28%
Business Excellence	19%
Benefit Management Practices	15%
OPM maturity assessment	6%

The main and direct link of strategy management to OPM is with the portfolio management where the business drivers (strategic objectives) and the strategy gap determine the required portfolios, programs and projects that are required to close this gap. The mutual inputs/outputs between the strategy management and the organizational project management (OPM) practices are as follows: priority areas, business drivers, existing and required portfolios, portfolios, programs and project business cases, dependency list, and vertical and horizontal alignment.

The survey showed that 49% of the surveyed organizations have their strategy management as a part of an existing business model. The highest level of linkage of strategy management was observed with the project management practices, followed by portfolio, then programs (33%, 19%, and 17% respectively). The previous result showed projects as the highest linkage with strategy which contradicts the fact that the portfolios should be the highest. This can be attributed to the many reasons; firstly, there is a lack of portfolio adoption within organizations and the only apparent link is with projects. Secondly, there is a lack of awareness within respondents about the portfolios that encompass their projects. Finally, the design of the operational plans within many organizations

Fig. 2 Practices/systems that have links with OPM.

directly links the projects with the strategic objective without indicating the relevant portfolio.

Linkage of benefits management with OPM governance components

Benefits are the main driver behind creation of all OPM components (Portfolios, Programs, and projects). Expected benefits are in the core of any value proposition. Mossalam and Arafa [13] concluded that benefits should be identified and managed at all levels of OPM including the project level.

Although this practice is important, only 14.9% of surveyed organization have benefits management as a part of their existing business model. The highest level of linkage of benefits management was observed with the program management practices, followed by portfolio, then projects. (19%, 13%, and 12% respectively). See Table 4.

Linkage of enterprise risk management (ERM) with OPM governance components

ERM provides several inputs to OPM components such as organizational risk appetite, risk categories, and risk tolerance, and it receives back the results of monitoring and controlling OPM components' risks that have effects extending beyond the component boundary to the organizational level.

The survey results showed that most organizations deal with this topic as a stand-alone subject with a limited link with the OPM practices (17%, 12% and 13% for portfolios, programs, and projects respectively), with the highest link between Portfolios and Enterprise risks which is commonly expected.

Linkage of quality management systems with OPM governance components

The QMS interacts with OPM components through policies, procedures, processes, workflows, in addition to quality audits.

The quality management system as a part of a model was highly adopted by 55% as shown in Table 3 of the surveyed organizations. However, this relatively high implementation percentage was not reflected on the OPM components (21% for projects, 12% for programs, and 8% for portfolio level) which indicate a weak translation of the OPM practices into operating procedures and processes.

Linkage of lessons learned systems with OPM governance components

Documentation of lessons learned is one of the very essential practices when managing any of the OPM components. Lessons learned are inputs to other practices/systems and it is a subject to be assessed by Business Excellence assessors.

A single consolidated Lessons Learned repository across all organizational practices supported with proper classification, authority level, and adequate automation is a very much-recommended practice.

Lessons learned register and lessons learned reports are examples of the interaction between lessons learned and OPM.

When having a look at the direct link between the lessons learned practices and the portfolio, program and project practices it showed the following percentages: 13%, 19%, and 29% respectively (as shown in Table 4), which indicate relatively low implementation.

Linkage of business excellence systems with OPM governance components

This relation is best vitalized through linking the criteria of the business excellence programs with the knowledge areas of the project management through the OPM performance and outcomes.

The survey showed that the link is very weak. Only 6%, 8%, and 10% are the reported links in the surveyed sample for portfolio, program and project in sequence.

Linkage of performance management systems with OPM governance components

Different types of measures can be developed to monitor the organizational project management activities during the project/program/portfolio lifecycle. These can vary between leading and lagging measures to monitor the OPM components during different phases. Performance results, and improvement recommendations are examples of information exchanges between the two practices (OPM – Performance).

Twenty-one percent was the highest percentage among others for link between project management practices and performance management. These percentages were 13% for both programs and portfolios management practices.

Survey summary and conclusion

In summary, and as can be seen from the summarized Table 4 below, there is a relatively weak linkage between the OPM practices and the majority of other surveyed practices.

It can also be seen that project management practices got the highest linkage percentage (average of 20%) among program management (14%) and portfolio management (13%) – which match with the market widespread of project management practices over program and portfolio practices.

In conclusion, although there are many systems and practices that are adopted by the surveyed organizations, and unfortunately they are relatively isolated and not integrated in one model. On the other hand, those who have an "integrated" system – (45% of the surveyed sample) – have levels

Table 4 Linkage summary with OPM governance components.

	Project Management	Program Management	Portfolio Management
Strategy Management	33%	17%	19%
Benefit Management Practices	12%	19%	13%
Enterprise Risk Management	13%	12%	17%
Lessons learned	29%	19%	13%
Quality Management System	21%	12%	8%
Excellence Program	10%	8%	6%
Performance Management	21%	13%	13%
Average	20%	14%	13%

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of integration that varies a lot depending on defining "integration" to be two or more integrated systems. The majority have project management, quality and strategy as components of this integrated system, while other important practices are essential to complete the integration.

The survey also showed a low level of linkage of OPM components (projects, programs, and portfolios) with other practices and a big opportunity of automation, which supports the need of developing an automated model that integrates OPM with other governance systems: strategy management, enterprise risk management, benefits managements, performance management, business excellence, and lessons learned aiming to support the successful realization of the organization strategy.

The artifacts of the model

To develop the model, the authors aimed to have one unified integrated system that leads to organizational project management excellence and achieves the comprehensiveness of a system that encompasses many systems/practices that already implemented but as independent standalone silos. The model components are those systems/practices that were reported having links with the OPM and as per the survey results.

The suggested model followed some rules that were reported as successful ones, these are:

1. Avoid recommending any major changes to existing systems or practices (keeping the same context) [5].
2. Avoid developing new practices for the management of projects, programs, or portfolios [5]. i.e. keep the ongoing OPM practices as is.
3. Having corporate units that play main roles in both supporting the implementation of the model and the sanity and assessment of this implementation.

To achieve point no. 3 of the rules above, the model should be supported by both the EPMO and the corporate internal audit department. The EPMO will be responsible for setting the directions and overseeing the model implementation while internal audit (IA) will ensure the implementation effectiveness of the model.

Fig. 3 shows a schematic diagram for the proposed model to link the organizational project management (OPM) practices with the seven systems/practices covered by the study. Fig. 3 is a re-sketching of Fig. 2 to show links between the components and the validation results as shown in Fig. 6 later.

Each double-sided arrow represents the relation/link among OPM and the seven components as described in Sections 'Linkage of strategy management with OPM governance components' to 'Linkage of performance management systems with OPM governance components' earlier. It worth mentioning that many of these seven components have interlinks but this is out of the scope of this paper.

Implementation and validation of the model

To validate the model, nine organizations were approached to explain the model and its value if implemented to the advance

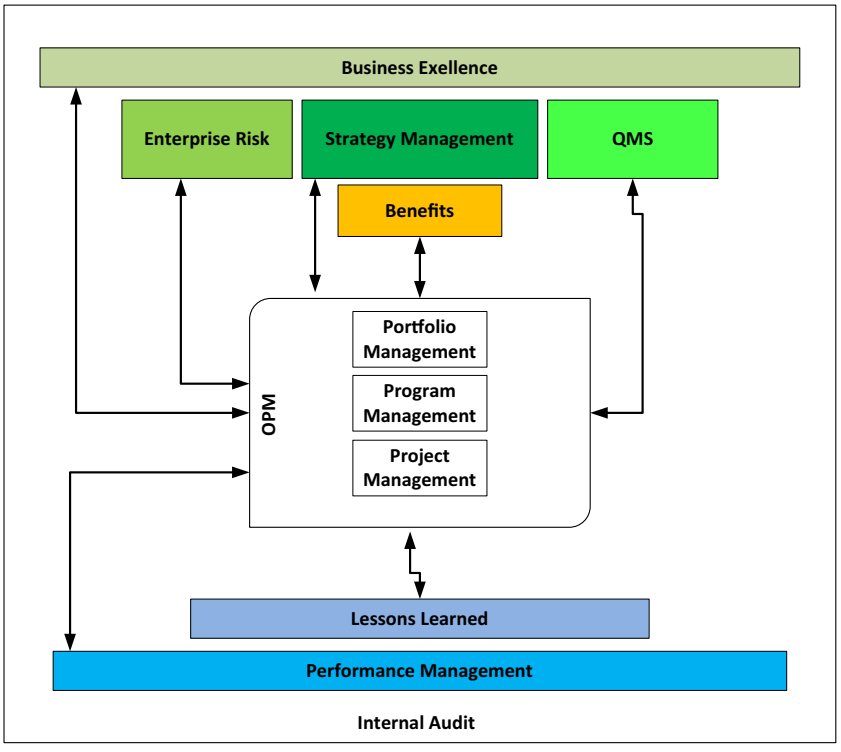

Fig. 3 Proposed OPM governance model.

of their project management journeys toward high levels of maturity.

Only two organizations agreed to incorporate the concept of the model in their initiatives and operational plans. Both organizations were government sector and they are delivering public services to the citizens of cities they exist. Other organizations declined for different reasons:

- No budget,
- Model is not suitable,
- Too complex to adopt,
- The model needs extra resources, and
- A long approval process is needed before adopting such a model.

The strategy for implementation was as follows:

- Approaching organizations to present the model and explain its advantages.
- Selecting those organizations which are known with no funding problems.
- Selecting the approaching time to be before the annual budget estimate and during completing the business case/project request form.
- After initial consent, many departments within the organizations were interviewed to agree on the roadmap and implementation steps. Example of these departments: strategic planning dept., enterprise project management office, quality and excellence dept., internal audit dept., and executive managers.
- Working closely with the IT department to ensure capturing the model requirements.
- Selecting pilot projects to start implementations in the testing stage.
- Going live.
- Capturing the implementation results.

The first organization is located in Abu-Dhabi in United Arab Emirates and has projects in the following fields: IT, roads, irrigation, public parks, and bridges. The majority of the practices were implemented with different levels of maturity except lessons learned, benefits and enterprise risk management which are rarely implemented and only polices and manuals are in place.

It was agreed to start automation of the model in cooperation with Microsoft© Middle East to develop a customized solution for this organization (2.85 M $ – six-month duration) and taking into consideration not to make major changes (only minor improvements) to the ongoing practices. The only two major changes were: (1) Following a generic project/portfolio lifecycle (Create, select, execute, and close) to suit the different types of projects, (2) Excluding some practices and deferring others to later stages (excluding programs that have null actual implementation and focusing on projects and portfolios and deferring the business excellence to later stages). Some screen shots of the developed solution are shown in Figs. 4a–4c.

The system is running since January 2014 and is managed by the both strategic planning department and EPMO. The implementation faced some aspects as follow:

Positive points	Negative points
No previous automation in many practices which creates a better opportunity for less changes	Low level of commitment to use the solution
The availability of funds which allowed a big automation project through well reputational international vendor: Microsoft©	The staff is still addicted to paper based systems and resisting the new system (change resistance)
The high number of approved projects (was an opportunity for multiple implementations)	Some staff lacks multiple concepts related to the different systems/practices
The model automation is Web enabled	The Internal Audit department exerts more efforts to assess and audit the system

The second organization is Dubai-based organization and working in the field of public transport and roads. Its projects vary among roads, bridges, landscape, rail, IT, traffic and buildings.

The automation was smaller than the first organization (0.6 M $ "phase I" – six months). As an overall assessment, the status in this organization was very much better than the first one. The rationale for this is that some systems are not an option; they are mandatory systems that should be implemented in every government organization to participate in achieving the overall Dubai strategy. Namely, these systems are: business excellence, performance management, strategy management, and quality management. This feature would give any model a considerable advantage and ensure its implementation and sustainability.

The implementation was planned to be done in multi-phases, where phase "I" started with automation of strategy, portfolios and projects, benefits, lessons learned and performance. Phase II is planned for the remaining practices excluding programs.

The system is up and running now for 4 months till date and Fig. 5 shows some screen shots of the system.

Some points were captured as a result of implementation these are:

Positive points	Negative points
Moderate to high commitment for using the system	Many systems and applications are in place and the staff is stressed with these applications
User-friendly application (easy interface)	The lack of awareness of the portfolio management concepts between key staff
Widely integrated with many commercial and financial systems (capture financial data)	No methodology to apply the captured lessons learned in future
The model automation is Web enabled	Still some approvals are done outside the system

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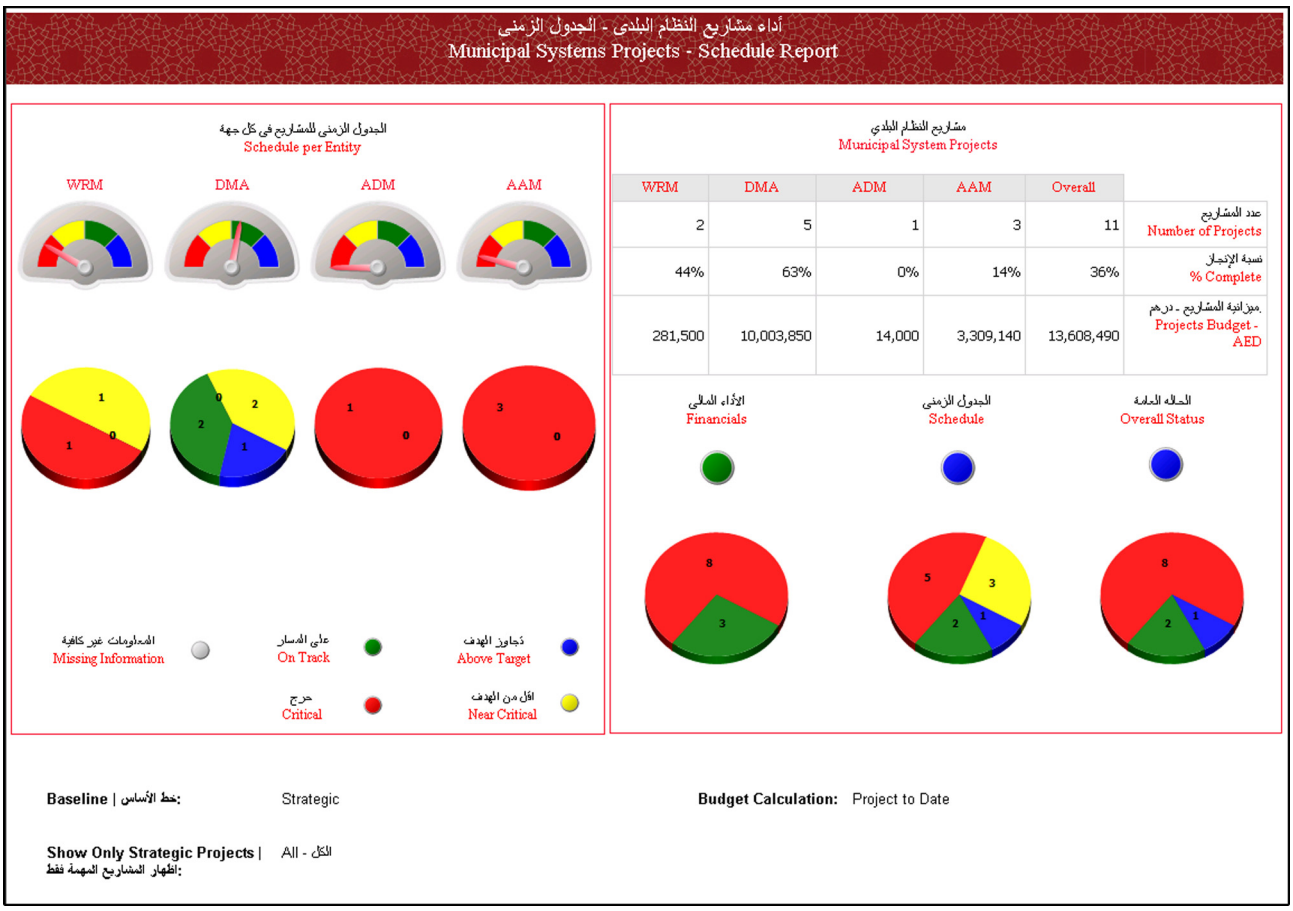

Fig. 4a Screen shots of the implementation in organization no. 1 (Schedule report).

Results of implementation

In this section, the authors will show the results of implementation followed by some measures to check the success of the developed model (Section 'Measuring the success of the developed model').

The direct impacts of the implementation in these two organizations revealed some results that can be summarized as follow:

(1) The staff needs more awareness with the concepts of each practice to effectively contribute the proposed governance model.
(2) Adopting a change management project to incorporate the new proposed model into the corporate system and reduce the resistance to change.
(3) Redefining the roles and responsibilities according to the proposed model.
(4) There are no checks or controls in the interfaces between OPM and the model components.

As a result, and as a direct result of point number (4) above, control points (phase gates) were introduced in the major interfaces between the different components as per Fig. 6 (this change was done during the pilot implementation before going live).

(The phase gate is a control point that exists at major interface points to ensure the completeness and correctness of the outputs/inputs from/to each system).

Three phase gates were suggested based on the mutual major impacts among OPM and strategy management, benefits management and enterprise risk management where major decisions have to be made for projects such as stop the project, defer the project, review, or cancel the project (Go/No Go decision). Table 5 shows the proposed phase gate details.

The other type of control points is called "Check points" among the interface between the OPM and the rest of model components (QMS, Lessons learned, Performance, and Business excellence). These "check points" do not have the power of "phase gates" to stop, defer, review, or cancel the project. Table 6 shows the proposed checkpoints detail as shown in Fig. 6.

These phase gates and checkpoints are reflected in the automated system with three options (yes–no – resubmit) with another option to completely stop/cancel a project within the phase gates only.

Measuring the success of the developed model

Generally, the implementation resulted in some immeasurable and measurable benefits that can be summarized as follow:

Immeasurable benefits:

(1) The model enabled the alignment of all projects with portfolios and corporate strategic objectives. It is now

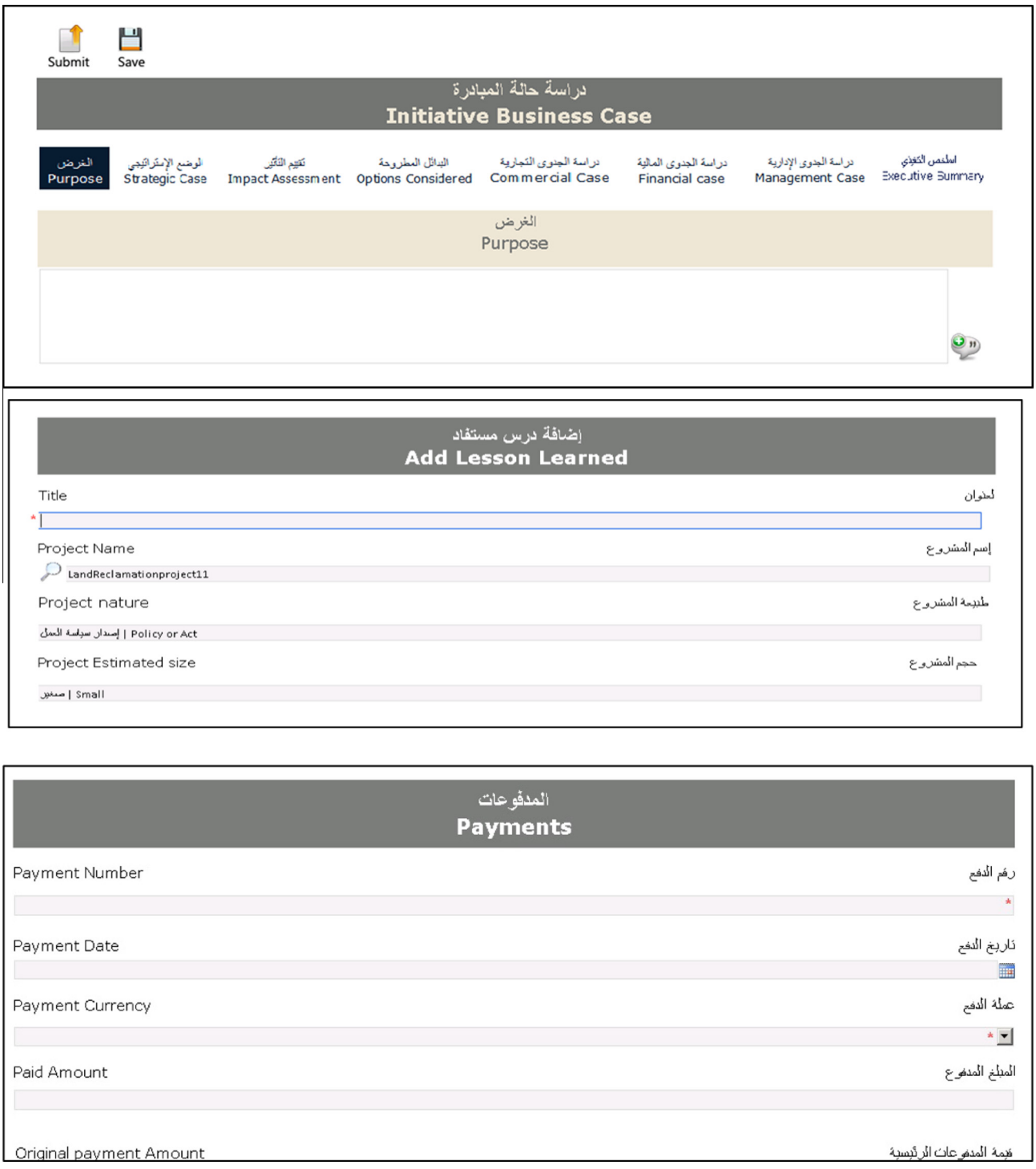

Fig. 4b Screen shots of the implementation in organization no. 1 (business case, lessons learned, and payments).

not common to insert/remove a project before checking its alignment and its impacts on strategy.

(2) The synergy and alignment of corporate practices with project governance is very much improved.

(3) More awareness of the projects/portfolios risks that affect the enterprise-level risks.

(4) Moving a step ahead in the web-based applications which is expected to be the next generation of project management practices.

(5) The culture and project management language of project managers are now more mature due to introducing relatively new terminologies of other practices within the context of managing projects and portfolios.

Measurable benefits:

(1) Less working hours are now needed to register projects' data as a direct result of systems integrations. (It is esti-

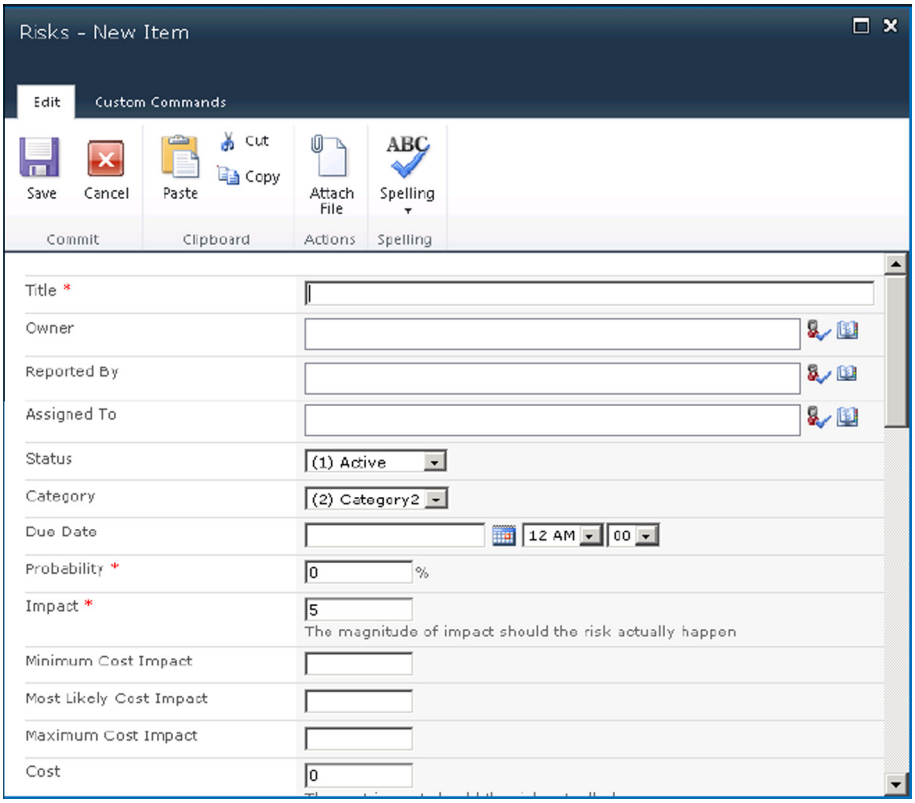

Fig. 4c Screen shots of the implementation in organization no. 1 (risks).

mated to be 20% less than working on multiple systems – result was reported from a one-question survey to systems users).

(2) A new dimension was added to evaluate the projects, which is "achieving the planned values/benefits" and not limiting the project success to schedule, cost, scope, or quality.

Moreover, some performance indicators were further suggested to identify the success of the developed model:

1. Percentage of overall system usage.
2. Percentage of post-project closure reports addressing achieved benefits.
3. Number of shared lessons learned per division.
4. Percentage of user satisfaction about system added value.
5. Percentage of projects that are not aligned with corporate strategy.
6. Percentage of risks that were escalated from projects to ERM system.

Table 7 shows some characteristics of these KPIs and their results.

In conclusion, the different parties generally accept the system and benefits are being gradually realized. However, it needs continuous follow-up to ensure compliance and to work on improvements and comments raised during system implementation.

Recommendations for future improvements of the model

The following is a summary of improvements that are suggested for the model:

1. Covering the pre-initiation and postclosure phases of the projects, which are not parts of the current project lifecycles (i.e. having a wider range of the lifecycle and dealing with projects as assets).
2. Having a "Closure business case" to record the changes observed after delivering the OPM component and to recapture the tangible and intangible benefits of the project/-portfolio. Having such a business case adds a value by focusing on the business outcomes not just the project outputs or deliverables.
3. Integrating the model with the principles of asset management.
4. Start measuring the maturity level of each component of the system.
5. Revisiting and developing the roles and responsibilities especially at interface points.
6. Having a balance between the lagging and leading performance indicators within the different components practices of OPM (projects and portfolios).
7. Enlarging the lessons learned module to be a part of a knowledge management system.

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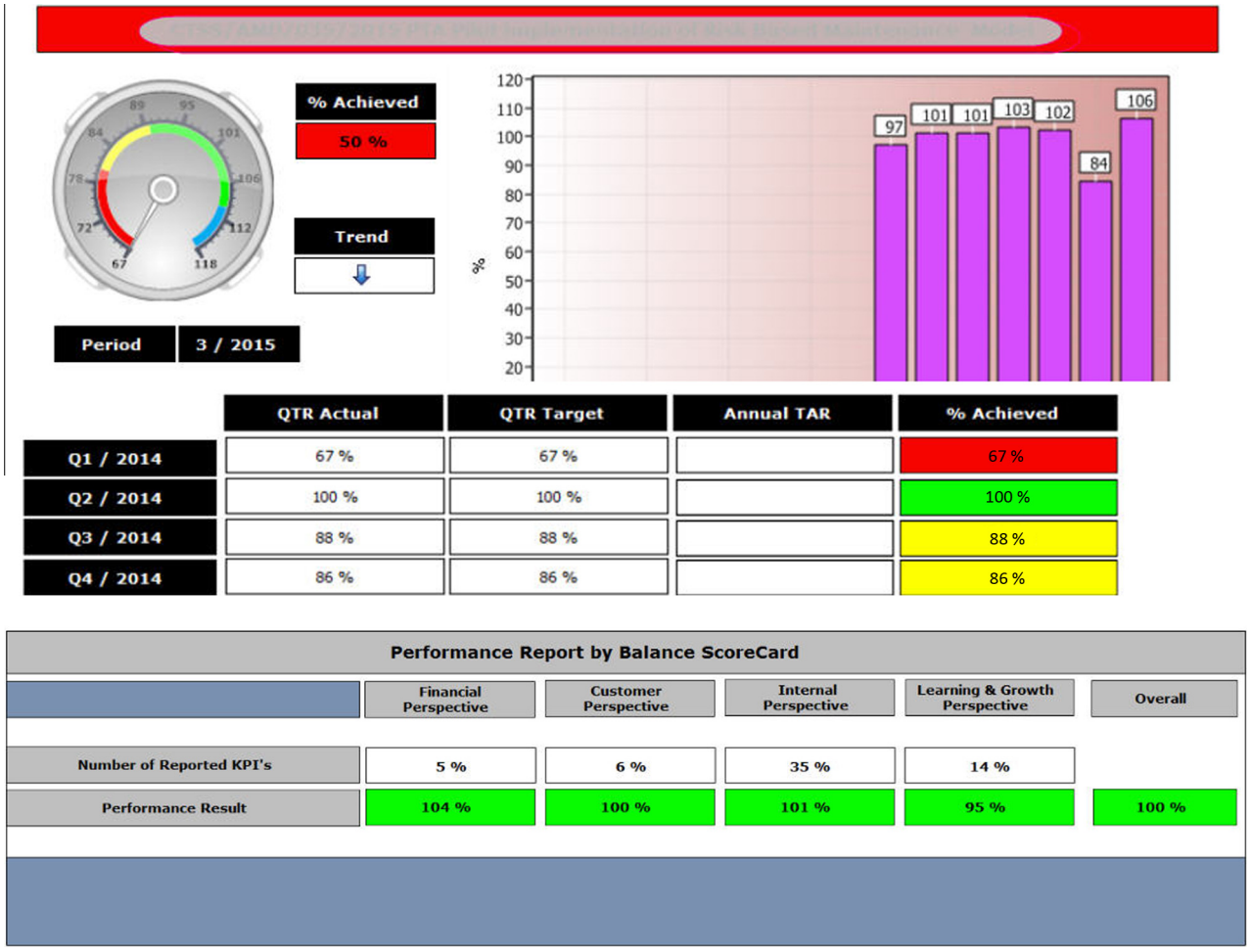

Fig. 5 Screen shots of the implementation in organization no. 2.

Table 5 Phase gates characteristics.

Phase gate no.	Interface	Purpose	Major checks
1. Strategy management	• Upon authorization of any component of the OPM • Upon major changes	The OPM should be checked against their alignment with the strategic objectives	1. Verifying that projects and portfolios are cascaded from the strategy gap and the organization's strategic objectives 2. Clear strategy map with clear links among the strategic objectives, initiatives and projects 3. Proper vertical and horizontal alignment of the strategy components
2. Benefits	• As per the benefit review plan • Upon major changes	It is a periodical check during the lifecycle of the project and very essential to decide the feasibility of starting new project/continue running a project	1. Clear identification of benefits 2. Benefits measures and KPIs 3. Benefits Realization plan 4. Postclosure measurement for project benefits
3. ERM	• As per the risk review plan	A comprehensive review of all enterprise risks identifying the effects on the new or running projects On the other hand, the project risks should be checked if they must be escalated to the enterprise level	1. Review of enterprise risk register 2. Effectiveness of existing treatment plans 3. % of unidentified risks 4. Review of the 3Ps risks registers to discover risks with strategic impact

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Table 6 Check points details.

Check point no.	Interface	Purpose	Major checks
"4" – QMS	This check is periodical according to quality audit plan	Periodical and unplanned quality audits shall be performed to ensure compliance with organizational polices and processes	1. Compliance with the organizational policies and processes 2. Existence of the project and portfolio quality management plans (QMP) 3. Compliance with the QMP requirements 4. Implementation of previous Quality audit recommendations
"5" – Lesson learned	• Upon major changes • During contract closure • After completing major phases	Ensure making benefits of any lessons learned either positive or negative	1. Are Lessons learned well captured and recorded? 2. The lessons are clearly categorized/classified? 3. Clear recommendations for future phases/projects?
"6" – Performance measurement	This check is periodical according to performance measurement plan	To effectively monitor the performance through leading and lagging indicators within a performance measurement system	1. Current performance of the OPM 2. Effective corrective actions? 3. Trend analyses are considered?
"7" – Business excellence	This check is periodical according to excellence assessment plan	To ensure compliance of the OPM with the excellence program requirements	Compressive assessment as per the excellence program evaluation criteria

Table 7 Model's KPIs and their results.

KPI	Frequency of measurements	Target	Source of measurement	Measured value	Comment
Aligned projects	Yearly	$<10\%$	Strategic plan and strategy map	23% (not achieved)	The system highlighted many projects that need alignment with strategy. (Some projects are special and are forced-in projects)
System usage	Monthly	$\geqslant 75\%$	IT administrator	87%	The system is in its early age and high usage is expected
Benefits postclosure	Yearly	$\geqslant 90\%$	System reports	6.3% (not achieved)	Few projects were closed after system went live
Shared lessons	Monthly	$\geqslant 25\%$	Shared lessons learned (system report)	40%	Most of departments and divisions have lessons to share especially in contractual, management, and suppliers areas
Satisfaction	6 months	$\geqslant 75\%$	Survey	81%	This value is an initial value and should be compared with future value for satisfaction trend
Escalated risks	Quarterly	$\geqslant 15\%$	Enterprise risk register	17%	System allowed escalation of risks easily to the corporate level

Summary and conclusions

In their journey for success, innovative organizations seek implementing systems and practices that enable achieving their ultimate goals through its processes, projects, and portfolios. To achieve an integrated organizational project management governance model that combines and integrates with all related governance systems, a survey was conducted to identify the gap that needs closing in aligning the practices of organizational project management with other corporate practices and systems. Based on the interrelations between the different corporate systems and the survey results, a model was developed to integrate the practices of organizational project management (projects, programs, and portfolios) with the following systems: strategy, benefits, enterprise risks, quality systems, performance, and business excellence.

The model implementation journey started with actual application and automating the proposed model which was subject to some changes that mainly reflected in providing the model with two types of controls at major interfaces between the components of the model. The results of implementation ranged among the following:

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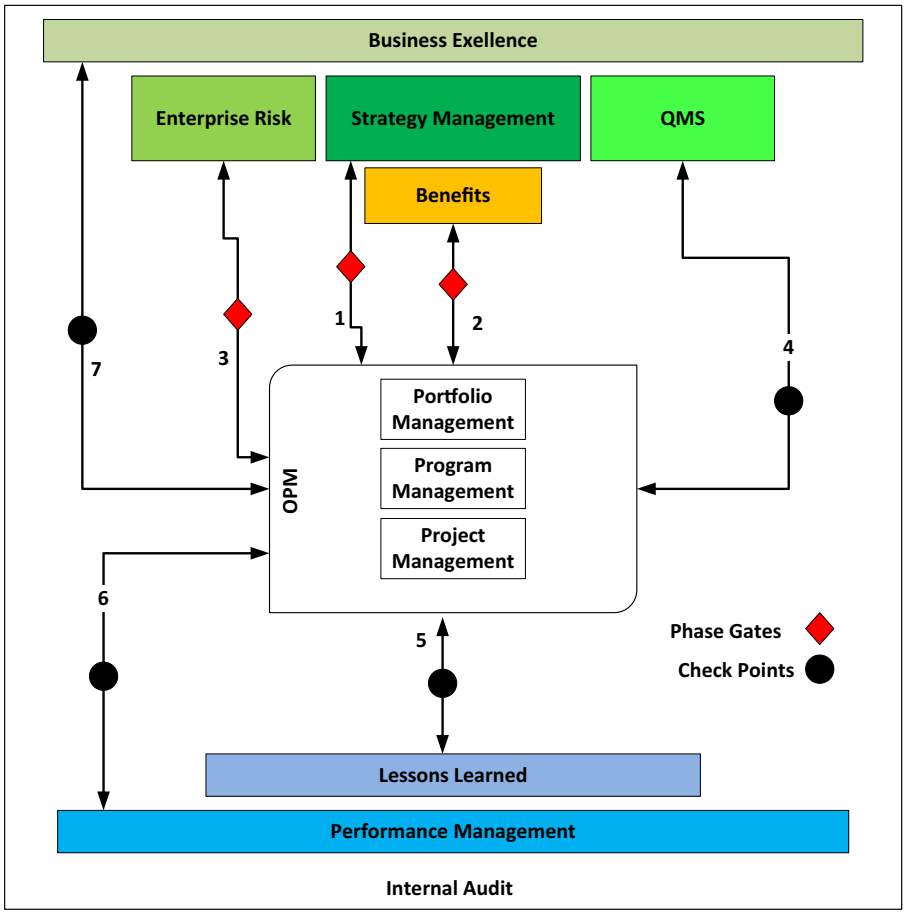

Fig. 6 Modified OPM governance model.

Greater visibility, stronger governance, reducing data entry efforts, vitalization of enterprise risk, benefits, and excellence concepts among the project managers.

On the other hand, some measurable benefits were realized:

- System usage.
- Reduced number of unaligned projects with corporate strategy.
- Users satisfaction.
- Greater integration between project risks and enterprise risks.
- More focusing on benefits realization of completed projects.

The authors' recommendations for future model improvements focused on widening the project lifecycle to include pre and postphases in addition to handling the project outputs/benefits from an asset management perspective.

Conflict of interest

The authors declare that there are no conflict of interest.

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